



Master Lesson Plan

For

Area and its Boundary

Board	Standard	Subject	Chapter	Language	Reference Link	Creation Date
CBSE	STD V	Mathematics	Area and its Boundary	English	Area and its Boundary	2020-08

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Area and its Boundary

1. MS_ Objectives - Perimeter and Area

Note to the teacher: This asset lays down the proposed plan for transacting this chapter. It states the asset objectives of the MLP. This asset is for teacher's reference and need not be taught to the students.

Students will be able to:

- Define perimeter.
- Find the perimeter of a rectangle and square by measuring its sides.
- Identify that the sum of twice the length and twice the breadth of a rectangle is the perimeter of the rectangle.
- Calculate the perimeter of a rectangle using the formula.
- Identify that the sum of all sides is the perimeter of the square.
- Calculate the perimeter of a square using the formula.
- Apply perimeter in daily life situations.
- Define Area.
- Identify the area of a rectangle and square by dividing it into unit squares.
- Understand that the area of a rectangle is the product of its length and breadth.
- Calculate the area of rectangle using the formula.
- Explain that area of the square is square of its length.
- Calculate the area of the square using the formula.
- Determine the area and the perimeter of any two-dimensional figure.
- Apply area in daily life situations.
- Exercise discrimination to become a good human being.

Time to teach	Asset Type	Theme	SubTheme
8 Minutes	Main Script	Perimeter & Area	Perimeter of regular polygo rectangle, Area of rectangle Perimeter of regular polygo rectangle, Area of rectangle

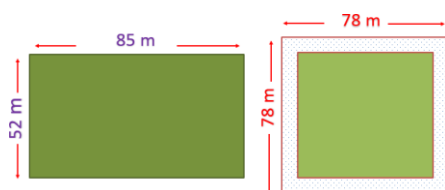
2. IQ_Perimeter

Teacher shall give the below scenario and ask the students to find the answer.

Arvind loves to walk around the rectangular park every day, by breathing the fresh air and by watching the bird chirping. He starts from the main gate of the park, walks around the park, and comes back to the same place after completing one round. The length of the park is 85 m and the breadth of the park is 52 m.



Arvind's friend Deepak is also a nature lover, he walks around a square park near his house. He also completes one round every day. One side of the square park is 78 m.



Who covers the most distance every day?

Wait for the students to come up with the answers. Some of the students would have told the correct answer. Ask that student to come forward and explain it to others.

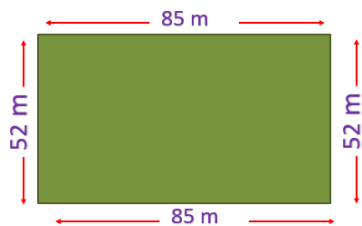
Explanation:

Then, the teacher shall explain that the distance covered by Arvind is the total length around the rectangular park. And the distance covered by Deepak is the total length around the square park. The length of the boundary of any closed figure is known as its **perimeter**.

The shortest length of the boundary of any closed figure is called the Perimeter and it is denoted by P.

Let us find the perimeter of the rectangular park. We know that for the rectangle the opposite sides are equal.

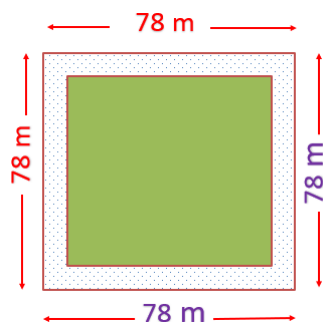
Thus, the perimeter of the rectangular park is:



$$P = 85 + 52 + 85 + 52 = 274 \text{ m}$$

Arvind covers 274 m.

For the square, all the sides are equal. Thus, the perimeter of the square park is



$$P = 78 + 78 + 78 + 78 = 312 \text{ m}$$

Deepak covers 312 m.

Since 312 is more than 274, Deepak covers the most distance every day.

Reference URL for the Images:

<https://pixabay.com/vectors/boy-walk-cartoon-animation-figure-312238/> (Boy)

<https://pixabay.com/illustrations/park-play-slide-children-4257026/> (Park)

<https://pixabay.com/illustrations/park-background-trees-road-car-4918350/> (Park)

<https://pixabay.com/illustrations/boys-run-men-children-cute-kids-3427679/> (Boy)

<https://pixabay.com/illustrations/family-characters-illustration-2324257/> (Boy)

Time to teach	Asset Type	Theme	SubTheme
8 Minutes	Inquisitive Questions	Perimeter & Area	Perimeter of regular polygon, Perimeter of rectangle, Perimeter of rectangle

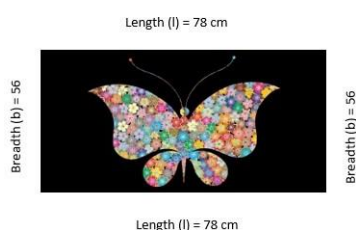
3. MS_How to find the Perimeter?

Perimeter of a rectangle:

Teacher shall start the class with the following example: Tanya did a painting and she wants to decorate the border with a satin ribbon. The length of the painting is 78 cm and the breadth of the painting is 56 cm. What is the length of the ribbon she requires to give the border for the painting?

By now, the students know that they have to find the Perimeter of the painting to find the length of the satin ribbon that Tanya requires for the decoration.

The painting is in rectangular shape.



Rectangle is a two-dimensional figure with length (l) and breadth (b). Students already know that the opposite sides are equal for a rectangle.

The perimeter of the rectangle is $= l + b + l + b$

$$= 2l + 2b$$

$$= 2(l + b)$$

Perimeter of a rectangle is $2(l + b)$

Substitute the length and breadth of the painting in the above formula.

The perimeter of the painting is $= 2(l + b)$

$$= 2(78 + 56)$$

$$= 2 (134)$$

$$= 268 \text{ cm}$$



Therefore, the length of the satin ribbon Tanya requires to decorate the painting is 268 cm.

Units of the perimeter are the units of the length:

- Millimetre (mm)
- Centimetre (cm)
- Metre (m)
- Kilometre (km)

We can only add the lengths that have the same units. If one side of an object is in inches and another is in feet, we must convert either inches to feet or feet to inches before adding. If no units are given, assume that they are the same.

Perimeter of a Square:

The teacher shall give another example, John has a field with all the four sides equal. The length of one side is 24 m. How much wire will be required to fence it?

A square is a regular polygon and all the sides of a square are equal in length.



Perimeter of a square is $s + s + s + s = 4 \times \text{side}$

Perimeter of a square is $4 \times \text{side}$

John wants to fence his field. We need to find the perimeter of the field first to find the length of the wire he would require to fence the field.

Perimeter of John's field is = 4 x side

$$= 4 \times 24$$

$$= 96 \text{ m}$$

Hence, John would need 96 m wire to fence his field.

Points to Remember

- If you have to find the breadth of a rectangle and its perimeter and length are given, divide the perimeter by 2 and subtract length from it.
- If you have to find the length of a rectangle and its perimeter and breadth are given, divide the perimeter by 2 and subtract breadth from it.
- If you have to find the Side of a square and its perimeter is given, divide perimeter by 4.

Example 1:

A rectangular room measures 16 m in length and 12 m in breadth. Find the perimeter of the room.

Answer:

Length of the room (l) = 16 m

Breadth of the room (b) = 12 m

Therefore, the perimeter of the rectangular room = 2 (l + b)

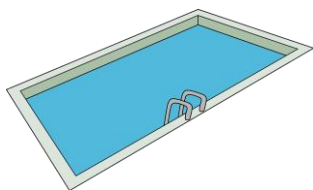
$$= 2 (16 + 12)$$

$$= 56 \text{ m}$$

The perimeter of the room is 56 m.

Example 2:

The perimeter of the swimming pool is 166 m. The length of the swimming pool is 58 m. Find the breadth of the swimming pool.



Answer:

The perimeter of the swimming pool is (P) = 166 m

The length of the swimming pool is (l) = 58 m

Therefore, the breadth of the swimming pool is (b) = (Perimeter $\div$ 2) – Length

$$= (166 \div 2) - 58$$

$$= 83 - 58 = 25 \text{ m}$$

The breadth of the swimming pool is 25 m.

Example 3:

The perimeter of the square playground is 184 m. Find the side of the playground.



Answer:

The perimeter of the square playground is (P) = 184 m

The side of the square playground is = $P \div 4$

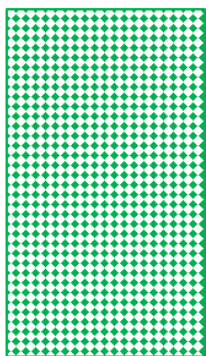
$$= 184 \div 4$$

$$= 46 \text{ m}$$

The side of the square playground is 46 m.

Example 4:

Karan runs 4 times around the rectangular park of length 104 m and breadth 82 m. Find the total distance covered by Karan.



Answer:

The length of the rectangular park is (l) = 104 m

The breadth of the rectangular park is (b) = 82 m

The perimeter of the rectangular park is $(P) = 2 (l + b)$

$$= 2 (104 + 82)$$

$$= 2 (186)$$

$$= 372 \text{ m}$$

Karan covers 372 m in one round.

Therefore, total distance he covered in 4 rounds is $372 \times 4 = 1,488 \text{ m}$

Karan covers 1,488 m in 4 rounds around the rectangular park.

Reference URL for the Images:

<https://pixabay.com/illustrations/butterfly-flower-butterfly-insects-3304385/> (Butterfly)

<https://pixabay.com/photos/panorama-summer-meadow-field-away-3629120/> (Field)

<https://pixabay.com/vectors/swimming-pool-swimming-pool-ladder-149632/> (Pool)

<https://pixabay.com/illustrations/park-play-slide-children-4257026/> (Playground)

Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Main Script	Perimeter & Area	Perimeter of regular polygon, Perimeter of rectangle, Perimeter of rectangle

4. SA_Find the Perimeter

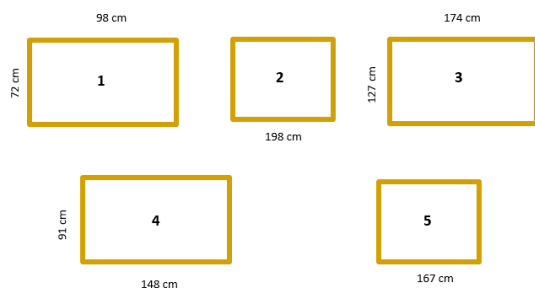
Aim: Students will learn to find the perimeter of a rectangle and square by measuring its sides.

Resources Required: Masking tape, tailoring tape, paper and pencil



Procedure:

- It is a group activity.
- As given in the figure below, using the masking tape, teacher shall make 3 rectangles and 2 squares on the floor and name it as figure 1, 2, 3, 4 and 5.
- Teacher will not give the measurement of the shapes to the students.



- Teacher shall divide the students into 5 groups.
- Each group will have a tailoring tape, paper and a pencil to note down the measurements.
- They will measure the sides of each shape and note it down in the table.
- Once the first group is done with the shape 1, they will measure the shape 2 and so on.
- Make sure that all the groups will measure all five shapes by taking turns.
- Students will fill the table (Given below) and calculate the perimeter.

Figure No.	Rectangle/ Square	L & b or Sides	Perimeter (P) Formula to be used	Perimeter (P)
1	Rectangle	L = 98 cm ; b = 72	$P = 2 (l + b)$	P =
2				
3				
4				
5				

- After completing the table, students will observe the table and answer the following questions:
- Which figure has the smallest perimeter?
 - Which figure has the largest perimeter?
 - Between the figures 3 and 5, which has the largest perimeter?
 - Between the figures 4 and 2, which has the smallest perimeter and by how much?

Conclusion:

Students will be able to measure and calculate the perimeter of a rectangle and square.

Answers:

Figure No.	Rectangle/ Square	L & b or Sides	Perimeter (P) Formula to be used	Perimeter (P)
1	Rectangle	L = 98 cm ; b = 72	$P = 2(l + b)$	P = 340 cm
2	Square	S = 198	$P = 4S$	P = 792 cm
3	Rectangle	L = 174 cm ; b = 127	$P = 2(l + b)$	P = 602 cm
4	Rectangle	L = 148 cm ; b = 91	$P = 2(l + b)$	P = 478 cm
5	Square	S = 167	$P = 4S$	P = 668 cm

1. Which figure has the smallest perimeter? **Figure 1**
2. Which figure has the largest perimeter? **Figure 2**
3. Between the figures 3 and 5, which has the largest perimeter? **Figure 5**
4. Between the figures 4 and 2, which has the smallest perimeter and by how much? **Figure 4 has the smallest perimeter, by 314 m**

Reference URL for the Images:

<https://pixabay.com/photos/brush-flat-brush-masking-tape-paint-3175639/> (Tape)

<https://pixabay.com/photos/paper-table-record-notebook-2541687/> (Paper Pencil)

<https://pixabay.com/photos/tape-measure-needle-yarn-sew-3829505/> (Tailoring Tape)

Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Suggested Activity	Perimeter & Area	Perimeter of regular polygon, Perimeter of rectangle, Perimeter of rectangle

5. QA _Questions on Perimeter

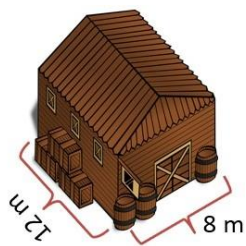
1) Fill in the blanks:

- I) In any 2-dimensional figure, the length of its boundary is called its _____.
- II) Perimeter of a rectangle is 2 times length + 2 times _____.
- III) Perimeter of a square is _____ times of its one side.

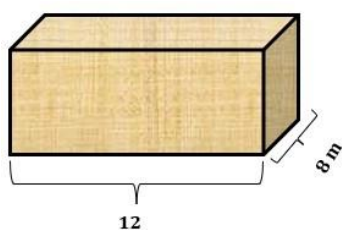
Answer:

- I) In any 2-dimensional figure, the length of its boundary is called its **Perimeter**.
- II) Perimeter of a rectangle is 2 times length + 2 times **breadth**.
- III) Perimeter of a square is **four** times of its side.

2) The opposite sides of a warehouse are equal. The longer side measures 12m and the shorter side measures 8 m. Find the perimeter of the warehouse.



Answer:



The opposite sides of the warehouse are equal; hence it must be a rectangular room.

Length of the warehouse (l) = 12 m

Breadth of the warehouse (b) = 8 m

Therefore, Perimeter (P) of the warehouse = $2 (12 + 8)$
 $= 2 (20)$
 $= 40 \text{ m}$

The perimeter of the warehouse is 40 m.

3) Find the perimeter of a square marble whose side is 27 m.

Answer:



The side of the square marble (s) = 27 cm

Perimeter (P) of the Marble

$$= 4 \times S$$

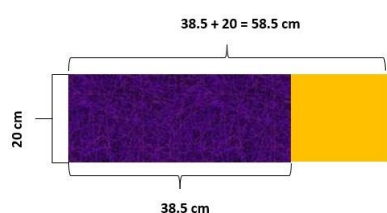
$$= 4 \times 27$$

$$= 108 \text{ cm}$$

The perimeter of the marble is 108 cm.

4) The length and breadth of a rectangle are 38.5 cm and 20 cm. If a square is perfectly attached to the width of the rectangle, what will be the perimeter of the newly formed rectangle?

Answer:



The length of a rectangle = 38.5 cm

The breadth of a rectangle = 20 cm

A square is exactly attached to the width (breadth) of the rectangle.

Breadth of the rectangle is the side of the square.

So, side of the square = 20 cm

Length of the new rectangle formed is $38.50 + 20 = 58.50$ cm

Breadth of the new rectangle = 20 cm

Perimeter of the rectangle (P) = $2 (58.50 + 20)$

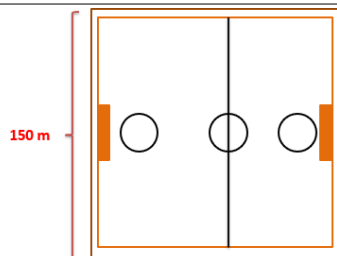
$$= 2 (78.5)$$

$$= 157 \text{ cm}$$

The perimeter of the newly formed rectangle is 157 cm.

5) Manoj comes to the ground to play basketball. His PT master asks him to run around the ground to warm up. The

side of the playground is 150 m. Manoj covers 1800 m in total. How many rounds he made?



Answer:

Side of the playground = 150 m

Perimeter of the playground = $4 \times S$

$$= 4 \times 150$$

$$= 600 \text{ m}$$

Manoj runs 600 m in one round.

Total distance covered by Manoj = 1800 m

Therefore, number of round Manoj made = $1800 \div 600$

$$= 3$$

Manoj made 3 rounds .

6) A rectangular picture frame is three times as long as it is wide. If it is 28 cm wide, what is the distance all the way

round the frame?



Answer:

Breadth of the frame (b) = 28 cm

Length of the frame is three times as long as its breadth (l) = $3 \times 28 = 84 \text{ m}$

Perimeter of the frame = $2 (l + b)$

$$= 2 (84 + 28)$$

$$= 2 (112)$$

$$= 224 \text{ m}$$

The distance all the way round the frame is 224 m.

Reference URL for the Images:

<https://pixabay.com/vectors/building-map-storage-game-playing-48716/>

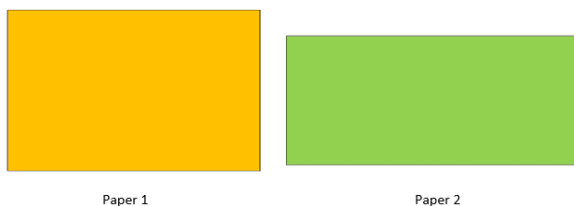
Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Assessments	Perimeter & Area	Perimeter of regular polygon, Perimeter of rectangle, Perimeter of rectangle

6. MS_How to find the area

Area of a Rectangle:

Teacher shall start the class by showing two different sized rectangular paper and ask the students which is bigger?

To find the bigger paper, we should know which occupies more flat space.



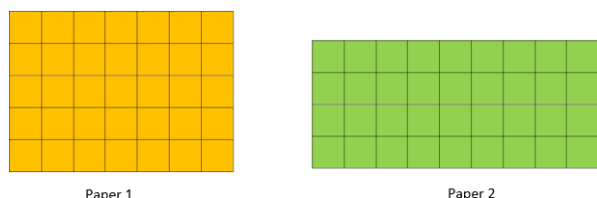
Some of the students will keep one paper over the other and say paper 1 is big because it is wider, and some of the students will say that paper 2 is big because it is longer.

Teacher says that to find which paper is big, we have to find which one occupies more flat space.

Using a scale, the Teacher divides the paper 1 into 7 equal parts in length with 1 cm gap and 5 equal parts of breadth with 1 cm gap.

Paper 2 is divided into 9 equal parts in length with 1 cm gap and 4 equal parts in breadth with 1 cm gap.

The size of each square will be 1 cm in length and 1 cm in breadth.



Count the number of squares in paper 1, it is 35 Squares

The flat space occupied by paper 1 is 35 squares.

The number of squares in paper 2 is 36 squares.

Hence, the flat space occupied by paper 2 is 36 Square.

Since 36 is bigger than 35, paper 2 is slightly bigger than paper 1.

The flat space occupied by paper 2 is more than paper 1.



It is not possible to divide the flat space equally for a big number as it takes a lot of time. Easier way to calculate is:

Observe the length and breadth of paper 1.

Length is 7 cm

Breadth is 5 cm

Therefore, the area of paper 1 is length x breadth

$$= 7 \times 5 = 35 \text{ cm}^2 \text{ or } 35 \text{ Square cm.}$$

In the same way, length, and breadth of paper 2.

Length is 9 cm

Breadth is 4 cm

Therefore, the area of paper 2 is length x breadth

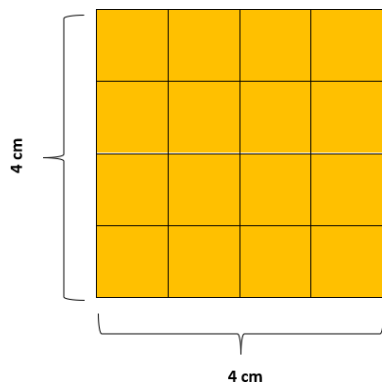
$$9 \times 4 = 36 \text{ cm}^2 \text{ or } 36 \text{ square cm}$$

Area of the rectangle is length x breadth
• Area is always expressed in square units. • The length and breadth should be in the same unit.

Note
• If the area and the length of a rectangle are given, to find the breadth, divide the area by length. • If the area and the breadth of a rectangle are given, to find the length, divide the area by breadth.

Area of a Square:

Teacher shall show a square paper and divide it into equal squares as given in the figure.



The area of the square is 16 cm^2 .

$$= 4 \text{ cm} \times 4 \text{ cm}$$

$$= \text{side} \times \text{side}$$



Example 1:

Find the area of a rectangle whose length is 24 cm, and breadth is 18 cm.



Answer:

$$\text{Length (l)} = 24 \text{ cm}$$

$$\text{Breadth (b)} = 18 \text{ cm}$$

$$\text{Area of the rectangle} = \text{length} \times \text{breadth}$$

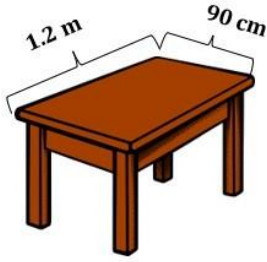
$$= 24 \times 18$$

$$= 432 \text{ cm}^2$$

Therefore, the area of the rectangle is 432 sq. cm.

Example 2:

The length and breadth of a rectangular table are 1.20 m and 90 cm. Find the area of the table.

**Answer:**

The length of the table = 1.20 m

The breadth of the table = 90 cm

To calculate area, length and breadth should be in the same unit.

The length of the table should be converted into cm.

$$1 \text{ m} = 100 \text{ cm}$$

$$\text{Therefore } 1.2 \text{ m} = 1.2 \times 100 = 120 \text{ cm}$$

The area of the rectangular table = length $\times$ breadth

$$= 120 \times 90$$

$$= 10,800 \text{ sq. cm}$$

Thus, the area of the table is 10,800 sq. cm.

Example 3:

Find the area of the square play area whose side is 84 m.

**Answer:**

Side of the square play area = 84 m

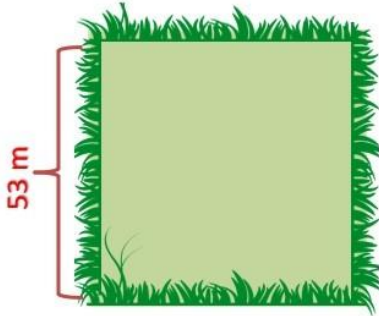
Area of the Square play area is = 84×84

$$= 7,056 \text{ Sq. m}$$

Thus, the area of the square play area is 7,056 sq. m.

Example 4:

A square plot's side is 53 m. Find the area of the plot. If 1 square meter of the plot costs ₹ 270, Find the total cost of the plot.

**Answer:**

The side of the plot = 53 m

The area of the plot = side x side

$$= 53 \times 53$$

$$= 2,809 \text{ sq m}$$

Cost of 1 sq m of the plot = ₹ 270

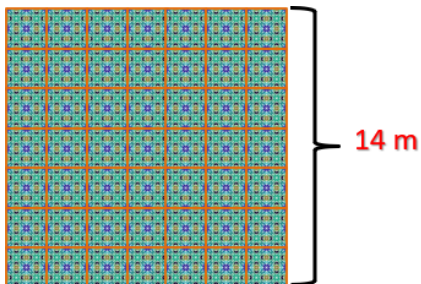
Therefore, cost of 2,809 sq m of the plot = 2, 809 x 270

$$= ₹ 7,58,430$$

The cost of 2,809 sq m of the plot is ₹ 7,58,430.

Example 5:

A square room has a length of 14 m. How many square tiles of 2 m in length are required to cover the floor of the room?

**Answer:**

Length of the square room = 14 m

Area of the square room = 14 x 14

$$= 196 \text{ sq m}$$

$$\text{Side of a Square tile} = 2 \text{ m}$$

$$\text{Area of the square tile} = 2 \times 2$$

$$= 4 \text{ sq m}$$

Number of tiles required to cover the floor of the square room

$$= 196 \div 4$$

$$= 49$$

Thus, 49 tiles are required to cover the floor of the square room.

Reference URL for the Images:

<https://pixabay.com/vectors/table-furniture-wooden-1300555/> (Table)

<https://pixabay.com/vectors/playground-animals-dog-cat-tree-3044380/> (play area)

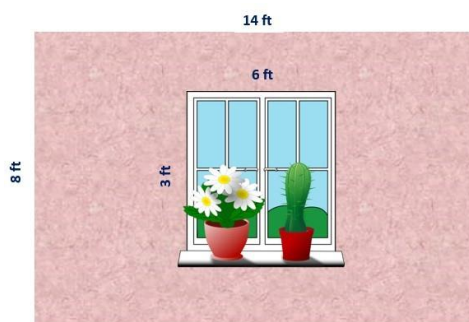
<https://pixabay.com/illustrations/mosaic-triangle-symmetry-2790339/> (Tile)

Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Main Script	Perimeter & Area	Area of rectangle and square rectangle and square

7. IQ_Area of the wall for painting

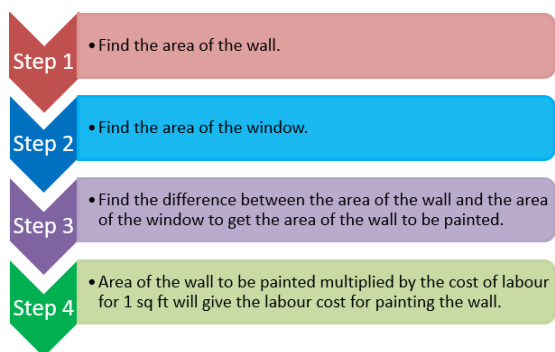
Teacher can give the following scenario to the students:

Akshay wants to paint one wall in his bedroom. The wall measures 14 ft long and 8 ft wide. There is a window which measures 6 ft long and 3 ft wide. Find the area of the wall to be painted. Also, if the labour charges ₹ 75 per sq. ft., what is the labour cost for painting the wall?



Wait for students' response. Some of them will come up with the correct answer.

Teacher shall write the following steps on the board and ask the students to solve it.



Answer:

Step 1

Length of the wall = 14 ft

Breadth of the wall = 8 ft

Area of the wall = length x breadth

$$= 14 \times 8$$

$$= 112 \text{ sq. ft}$$

Step 2

Length of the window = 6 ft

Breadth of the wall = 3 ft

Area of the wall = length x breadth

$$= 6 \times 3$$

$$= 18 \text{ sq. ft}$$

Step 3

Area of the wall = 112 Sq. ft

Area of the window = 18 sq. ft

Area of the wall to be painted = Area of the wall – Area of the window

$$= 112 - 18$$

$$= 96 \text{ sq. ft}$$

Step 4

Area of the wall to be painted = 96 sq. ft

Labour cost per sq feet for painting the wall = ₹ 75

Labour cost for painting the wall = 96×75

$$= ₹ 7,200$$

Thus, the cost for painting the wall is ₹ 7,200.

Reference URL for the images:

<https://pixabay.com/vectors/windowsill-cactus-flower-house-155621/> (Window)

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Inquisitive Questions	Perimeter & Area	Area of rectangle and square rectangle and square

8. IA_Perimeter and Area

Teacher shall discuss interesting facts about the Perimeter and area:

Land frontier of India is 15,200 km and the coastline of India is 7,516.60 km. Hence, the perimeter of India including land frontier and coastline is 22,716.60 km.



Area of India is 3.288 million square kilometres.



Perimeter of a circle is called **circumference**. The circumference of the earth is 39,940.653 km measured around the poles and around the equator, it is 40,075.017 km



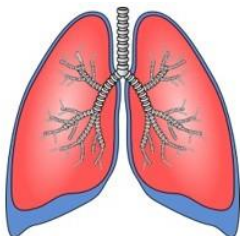
Vatican City, the smallest country of the world is surrounded by Rome, its area is 0.4921sq km



Russia is the largest country in the world and its area is 17,098,242 sq. km



Adult lungs have an average surface area of 50 to 75 square metres! It is less than half the size of the singles Tennis court



Reference URL for the Images:

SSSVV Gallery (India Map)

<https://pixabay.com/vectors/india-map-world-map-of-the-world-714772/> (India Map)

<https://pixabay.com/vectors/earth-globe-world-america-23593/> (Earth)

<https://pixabay.com/vectors/search/vatican%20city%20map/> (Vatican city)

<https://pixabay.com/vectors/borders-country-map-russia-1297160/> (Russia)

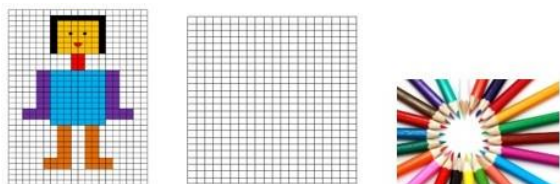
<https://pixabay.com/vectors/lungs-organ-anatomy-bronchia-154282/> (lungs)

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Interesting Asides	Perimeter & Area	Perimeter of regular polygons, Area of regular polygons, Perimeter of regular polygons, Area of regular polygons

9. SA_Perimeter and Area of the given figure

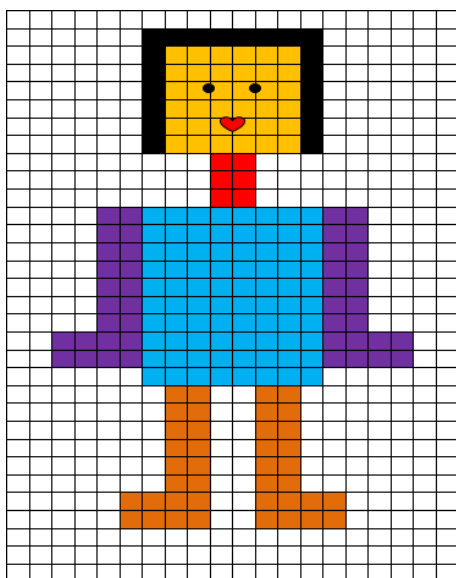
Aim: The Students will learn to find the perimeter and area of the given figure by counting the number of squares.

Resources Required: Printout of the figure , grid sheet for each student , colour pencils, paper and a pencil.



Procedure:

- It is an individual activity.
- On the previous day Teacher should print the grid paper for each student.
- Ask the students to bring the colourpencils.
- Teacher shall give a grid sheet to all the students.
- By looking at the PPT, ask them to colour the squares in the grid to make a figure like the one in PPT.



- If the teacher is unable to show the PPT, printout the Figure and show it to all the students.
- Teacher shall ask the students to use the formula to find the area and perimeter of the square and the rectangle in the figure.
- Once the students have completed the colouring as given in the figure, let them observe the figure and answer the following questions in their notebook.

Area and Perimeter of the Figure.

Area of the Hair _____ sq units.

Perimeter of the Hair _____ Units.

Area of the Face _____ sq Units.

Perimeter of the Face _____ Units.

Area of the Neck _____ sq. Units.

Perimeter of the Neck _____ Units.

Area of the Body _____ sq. Units.

Perimeter of the Body _____ Units.

Area of each Arm _____ sq. Units

Perimeter of each Arm _____ Units.

Area of each Leg _____ sq. Units

Perimeter of each Leg _____ Units.

Answers:Area of the Hair 20 sq units.Perimeter of the Hair $1 + 7 + 8 + 7 + 1 + 6 + 6 + 6 = 42$ Units.Area of the Face $6 \times 6 = 36$ sq Units. (Use the Area of the square formula)Perimeter of the Face $4 \times 6 = 24$ Units. (Use Perimeter of the square formula)Area of the Neck $3 \times 2 = 6$ sq. Units. (Use the Area of the rectangle formula)Perimeter of the Neck $2 (3 + 2) = 10$ Units. (Use the Perimeter of the rectangle formula)Area of the Body $10 \times 8 = 80$ sq. Units. (Use the area of the rectangle formula)Perimeter of the Body $2 (10 + 8) = 36$ Units. (Use the perimeter of the square formula)Area of each Arm 22 sq. UnitsPerimeter of each Arm $4 + 2 + 2 + 7 + 2 + 9 = 26$ Units.Area of each Leg 20 sq. UnitsPerimeter of each Leg $4 + 2 + 2 + 6 + 2 + 8 = 24$ Units.**Conclusion:**

Students will be able to calculate the perimeter and area of the given figure.

Reference URL for the Images:

<https://pixabay.com/photos/artistic-bright-color-colored-2063/>

Figure - Original Contribution

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Suggested Activity	Perimeter & Area	Areas of combinations of pl Areas of combinations of pl

10. DD_Perimeter and Area in Daily Life

Perimeter and area are important concepts in daily life as they are widely used by us in different ways.

Some of the examples are:

1) To Fence a plot:

For fencing a plot, the perimeter of that plot is required to buy the material.



2) Stitching lace for the tablecloth:

To stitch a lace for the tablecloth, we must know the perimeter of the tablecloth to buy the required length of the lace.



3) To find the distance covered by the person who is jogging around the park:

To know the distance covered by the person who is jogging around the park, we must know the perimeter of the park.

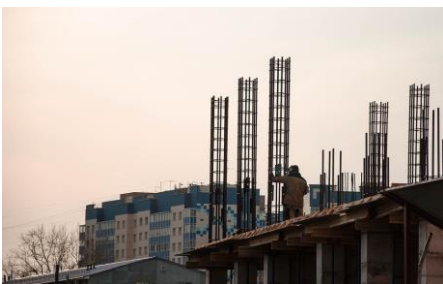


4) Fitting a photo in a photo frame:

To fit a photo into a photo frame, we must know the perimeter of that. Perimeter of both photo and photo frame should be same, otherwise it would be difficult to fit photo accurately.



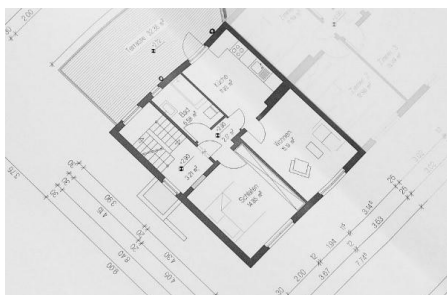
5) Engineers use perimeter and area to find out how much materials are required to build a house.



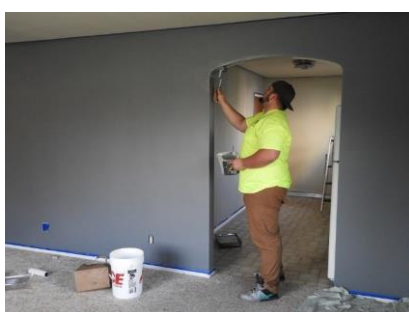
6) To buy a belt for us, we must know our waist size i.e. circumference (Perimeter) of our waist.



7) To plan for the house, the architect must know the area as well as the perimeter of the actual plot.



8) Painter must know the area of the walls and the ceilings to purchase the required quantity of paint.



Reference URL for the Images:

<https://pixabay.com/photos/squaw-mountain-barn-farm-ranch-4050221/> (Fencing)

<https://pixabay.com/illustrations/jogging-jog-running-run-fit-sport-3884209/> (Jogging)

<https://pixabay.com/illustrations/classic-gold-ornate-antique-photo-1649131/> (Frame)

<https://pixabay.com/illustrations/elephant-africa-savannah-serengeti-2231690/> (Photo)

<https://pixabay.com/photos/construction-working-builders-work-4789755/> (Building)

<https://pixabay.com/photos/belt-belt-buckle-metal-leather-139757/> (Belt)

<https://pixabay.com/photos/building-plan-floor-plan-354233/> (Plan)

<https://pixabay.com/photos/painter-paint-house-indoor-2247395/> (Painting)

Time to teach	Asset Type	Theme	SubTheme
8 Minutes	Day-to-day Relevance	Perimeter and Area	

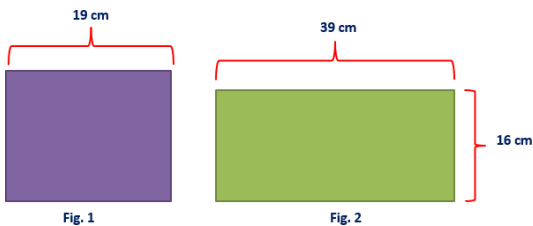
11. QA_Questions on area

1) Fill in the blanks:

- a) The flat space within the boundary of a two-dimensional figure is called its _____.
- b) The unit of area is _____.
- c) The formula for finding the area of a square is _____.
- d) Length times breadth gives the area of a _____.
- e) To calculate the size of the carpet to cover the entire floor of the room, we must know the _____ of the floor.

Answers:

- a) The flat space within the boundary of a two-dimensional figure is called its **Area**
- b) The unit of area is **Square unit.**
- c) The formula for finding the area of a square is **Side x Side.**
- d) Length times breadth gives the area of a **Rectangle.**
- e) To calculate the size of the carpet to cover the entire floor of the room, we must know the **area** of the floor.

2) Using the formula calculate the area of the two-dimensional planes, whose measurements are given below.**Answer:****Fig 1**

Area of the Square = $s \times s = 19 \times 19 = 361 \text{ sq. cm}$

Fig 2

Area of the Rectangle = $l \times b = 39 \times 16 = 624 \text{ sq. cm}$

3) The cost of 1 sq. km of a field is ₹ 400. Find the total cost of the field if the length and breadth are 82 km and 69 km.



Answer:

Area of the field = $l \times b = 82 \times 69 = 5,658$ sq. km

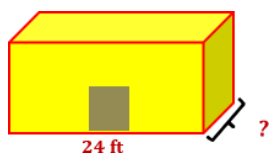
The cost of 1 Sq. km of the field = ₹ 400

Therefore, the cost of 5,658 Sq. km of the field = $5,658 \times 400$

$$= ₹ 2,263,200$$

Thus, the total cost of the field is ₹ 2,263,200.

4) The area of a room is 360 sq ft. If the length of the room is 24 ft, find the width of the room.



Answer:

Area of the room = 360 sq. ft.

The length of the room = 24 ft

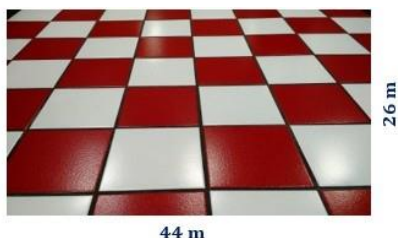
The width of the room = $\text{area} \div \text{Length}$

$$= 360 \div 24$$

$$= 15 \text{ ft}$$

Thus, the width of the room is 15 ft.

5) A party hall measures 44 m in length and 26 m in breadth. How many tiles of the size 4 m x 2 m are required to tile the floor of the party hall?



Answer:

Area of the party hall:

Length of the party hall = 44 m

Breadth of the party hall = 26 m

Area of the party hall = length x breadth

$$= 44 \times 26$$

$$= 1,144 \text{ sq. m}$$

Area of the tile:

Length of the Tile = 4 m

Breadth of the Tile = 2 m

Area of the tile = length x breadth

$$= 4 \times 2$$

$$= 8 \text{ sq. m}$$

Number of tiles required to tile the floor of the party hall = Area of the party hall ÷ Area of the Tile

$$= 1,144 \div 8$$

$$= 143$$

Thus, 143 tiles are required to tile the floor of the party hall.

6) The side of a square house is 37 m. If the cost of laying 1 sq. m wooden floor is ₹ 80. Find the total cost for laying the wooden floor for the entire house.

Answer:

Side of the room = 37 m

Area of the square house = side x side

$$= 37 \times 37$$

$$= 1,369 \text{ sq. m}$$

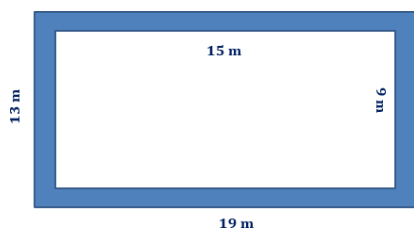
Cost for laying 1 sq. m wooden floor = ₹ 80

Therefore, the cost of laying 1,369 sq. m = $1,369 \times 80$

$$= ₹ 1,09,520$$

Thus, the total cost for laying the wooden floor for the entire house is ₹ 1,09,520

7) Calculate the area of the shaded portion.



Answer:

To find the area of the shaded portion, subtract the area of the inner rectangle from the area of the outer rectangle.

Area of the outer rectangle:

Length of the rectangle = 19 m

Breadth of the rectangle = 13 m

Area of the outer rectangle = 19×13

$$= 247 \text{ sq. m}$$

Area of the inner rectangle:

Length of the rectangle = 15 m

Breadth of the rectangle = 9 m

Area of the outer rectangle = 15×9

$$= 135 \text{ sq. m}$$

Area of the shaded portion = $247 \text{ sq. m} - 135 \text{ sq. m}$

$$= 112 \text{ sq. m}$$

Thus, the area of the shaded portion is 112 sq. m

Reference URL for the Images:

<https://pixabay.com/photos/meadow-field-green-nature-grass-2184989/> (Grass field)

<https://pixabay.com/photos/tile-red-white-floor-glossy-grout-890729/> (Floor Tiles)

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Assessments	Perimeter & Area	Area of regular polygons, Area of irregular polygons

12. VC_True Ornaments**True Ornaments**

A boundary encompasses an area. It helps to distinguish the area within and the area outside. As the boundary increases, area increases and vice versa.

Just as a boundary protects the area contained within, we need to put the boundary of 'human values' around us to make us 'good human beings' and protect us from evil influences.

What are the ornaments that help make a good human being? Let us see this story.

Story:

Once an old lady was asked, "what do you use to look so beautiful and attractive at this age?"

She said,

I use Truth for my lips.

For my voice, I use Goodness and Kindness.

For my ears, Sympathy.

For my hands, Charity.

For my figure, Uprightness.

For my heart, it is only Love.

And for all those who cannot cope with me, I pray.

Lesson:

If you always speak the Truth, you adorn your lips. Speak gently and kindly. Never say anything bad about anyone.

Develop feelings for others and help others as much as possible.

Giving and helping decorate the hands.

Show courage and righteous behaviour and be upright.

Love always creates a bond between unity and peace.

These are the hall marks of a good human being. To always look beautiful, we need to possess such ornaments which will shine more with time.

As Sathya Sai Baba says:

Watch Your Words

Watch Your Action

Watch Your Thoughts

Watch Your Character

Watch Your Heart

Video Attached:

VC - True Ornaments

Time to teach	Value Type	Value Sub Type	Value Attribute
10 Minutes	Truth		Stories

13. MS_ Summary - Perimeter and Area

Summary of Perimeter and Area:

- Perimeter of a figure is the total distance around the edge of the figure.
- Perimeter of a rectangle is the sum of twice its length and twice its breadth.
- Perimeter of a square is 4 times its length.
- We can only add the lengths that have the same units
- The flat space occupied by any two-dimensional figures is called the area.
- Area is always expressed in square units.
- Area of a rectangle is the product of its length and breadth.
- Area of a square is the square of its side.
- Interesting facts about area and perimeter.
- Measure perimeter and area of a given figure.
- Apply area and perimeter in daily life situations.
- To be a good human being and to look beautiful, we need to watch our words, action, thoughts, character and Heart.

Time to teach	Asset Type	Theme	SubTheme
8 Minutes	Main Script	Perimeter & Area	Perimeter of regular polygons, Definition of Perimeter, Area of rectangle and square, Perimeter of polygons, Perimeter of rectangles, Area of Perimeter, Area of rectangle